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Consumption Contribution to Economy Growth

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ABSTRACT

The analysis of the final consumption influence on the Gross Domestic Product is rarely studied. The final consumption is one important study that follow the expenses method of GDP calculation and formation. The econometric approach gives substantial results when a longer interval is approached. The fact of econometric model is the dependence of the national economy on final consumption. Thus, the unifactorial regression model can be used to establish the influence that the value of final consumption. The Researcher make some description about final consumption in Southeast Asia+3 and US. This research adopts a quantitative approach with the aim of analysing contribution and impact consumption on economic growth in ASEAN3+ countries and the United States during the period 1960-2020. The research population involves 14 countries, namely Southeast Asian countries, Japan, Korea, China, and the United States. The data used are secondary data obtained from the World Bank database, focusing on the dependent variable GDP of each country and the independent variables final consumption and CPI of the sample countries. The analysis method involves regression and the CUSUM test to measure the direct influence of consumption and CPI on economic growth. The research results indicate that consumption variables have a positive and significant impact on economic growth and CPI has a negative and significant impact on economic growth.

Keywords: ASEAN; Consumption; CPI; Economic Growth

JEL Classification:

1. Introduction

"GDP has recently faced unusually intense criticism with some commentators calling for it to be replaced by a more direct measure of wellbeing based on self-reports. One problem is not the concept itself, but the way it is used, and that too much is expected of it. The use of GDP as the headline measure of economic progress is particularly unfortunate, and has become more so as economies have changed and become more globally connected. I shall say something about this first, and then about how we should extend national accounts to handle distributional issues, and finally about the problem of measuring healthcare. I should also note that while I am very much in favor of the collection of self-reported measures of wellbeing, including both evaluations of wellbeing and reports of feelings, I do not think it makes sense to think of them as replacements for GDP or other measures in the national accounts. Extensive work has proved that these measures are useful, that they sometimes capture important aspects of life that are not otherwise measured, and that much can be learned from comparing them with other, more familiar, measures. I think it is unfortunate that self-reports of wellbeing are not regularly collected somewhere in the American statistical system" (Deaton, 2020).

"Again, there is nothing wrong with this situation, at least statistically, but if the news media continue to valorised GDP or per capita GDP, the concept will lose repute, undermining

public confidence in the national accounts. Much better would be to focus on what is happening to people, through their levels of disposable income or consumption" (Deaton, 2020).

The analysis of the final consumption influence on the Gross Domestic Product is one of the most important studies that follow the expenses method of GDP calculation and formation. The econometric approach gives substantial results when a longer interval is approached and, one of the truths behind the econometric model is the dependence of the national economy on final consumption. Thus, the unifactorial regression model can be used to establish the influence that the value of final consumption has on the evolution of Gross Domestic Product (Anghel, et.al, 2017).

Danquah, M., et.al., (2014) find that the most robust TFP growth determinants are unobserved heterogeneity, initial GDP, consumption share, and trade openness. A split of the sample into OECD and non-OECD countries reveals some interesting findings. Danquah, M., et.al., (2014) find that initial GDP and unobserved heterogeneity are the only two robust determinants common to OECD and non-OECD countries. For the sample of OECD countries, in addition to the fixed effects and initial GDP, the results find that investment price, consumption share, trade openness, and the labor force are robustly correlated to TFP growth. With respect to non-OECD countries, the only additional variable robustly correlated with TFP growth is population density.

Asumadu-Sarkodie, et.al. (2016) used variance decomposition and find that show that almost 19% of future fluctuations in household final consumption expenditure are due to shocks in GDP, while 13% of future fluctuations in household final consumption expenditure are due to shocks in mortality rate. Meaning that GDP affects household final consumption expenditure more than mortality rate, fertility rate, and the food production index in the long-run in Ghana. Besides that, 6% of future fluctuations in GDP are due to shocks in household final consumption expenditure the while 5,75% of future fluctuations in GDP are due to shocks in food production index. Meaning that food production index affects GDP more than fertility rate, mortality rate in the long-run in Ghana.

Shaikh, N. A., et. al. (2015) found that consumption function in Pakistan estimates show significant, strong and positive relationship between GDP and consumption expenditure. P-values (in braces) associated with constant and GDP variable in column 5 (under t) are <5% or 0.05 so the estimates have high generalizability power. The slope of the consumption function is the rate of change in consumption due to the change in income by one unit. The function result is C = –4484.05+ 0.821Y and the Multiplier $\frac{1}{1-MPC} = \frac{1}{1=0.821} = 5.587$

The other research state that the association between consumption, income and GDP was found significant in the all the considered panels of countries, more accentuated for the low and middle-income countries. The fact that a greater level of consumption and income increases the proxy of the standard of living, but to a lower degree for the high-income countries which are more proficient in investments and R&D activities, especially in human capital (Diacon, P.E., et.al., 2015).

The other paper said that consumption and production were usually seen in a relationship of mutually beneficial causation: increased consumption is not only the result but also the cause of a greater production of wealth, since it increases labor productivity (Perrotta,C., 1997).

2. Research Methodology and Data

This research is a quantitative study that aims to analyze the influence and contribution of consumption to the economic growth of ASEAN3+ and the United States (US) during the period 1960-2020. The data used are secondary data obtained from the World Bank Database, which

includes information on country consumption, Consumer Price Index (CPI), and Gross Domestic Product (GDP) of each country. The research methods used in this study are multiple regression and Cumulative Sum (CUSUM). Multiple regression is chosen to examine the intricate relationship between consumption and economic growth, allowing researchers to measure the impact of other variables that may influence this relationship. Meanwhile, CUSUM is applied to identify structural changes in the relationship during specific time periods. The use of multiple regression provides flexibility in controlling relevant control variables, while CUSUM aids in detecting structural changes that may occur in the relationship between consumption and economic growth.

The selection of these methods is based on the necessity to comprehensively understand how consumption contributes to economic growth in the context of ASEAN3+ and the US. Multiple regression enables researchers to measure the impact of other variables that may affect the outcomes, while CUSUM assists in detecting structural changes that may occur over the studied period. The combination of both methods is expected to provide a comprehensive insight into the relationship between consumption and economic growth in both regional and global contexts.

The regression equation utilized in this study is as follows:

$$1.\ GDP\$ = \beta_0 + \beta_1 ConsASEAN3\ and\ US + \varepsilon_t$$

$$2.\ GDP\$ = \beta_0 + \beta_2 CPIASEAN3\ and\ US + \varepsilon_t$$

In this model, $GDP\$$ is the dependent variable representing the economic growth (GDP) of a country in year *t*. β_0 is the constant, and β_1, β_2 are regression coefficients measuring the relationship between the independent variables and the dependent variable. The independent variables include the consumption rate and the Consumer Price Index (CPI). Furthermore, ε_t represents the random error in year *t*, reflecting factors that cannot be explained by the independent variables in the model.

3. Results and Discussions

This research utilizes the variables of a country's consumption and CPI to examine their contributions in ASEAN3+ countries and the United States. A country's consumption and the Consumer Price Index (CPI) are two fundamental concepts in economics that provide insights into consumer behavior and changes in market prices. A country's consumption refers to the total household expenditures on goods and services over a period. It encompasses various sectors such as food, housing, education, and recreation, offering a comprehensive overview of how the population uses resources to meet their needs and desires. On the other hand, CPI is a statistical indicator measuring changes in the prices of a group of goods and services commonly consumed by households. CPI is used to monitor inflation or deflation rates, reflecting the impact of price changes on consumer purchasing power. An increase in the CPI indicates a rising cost of living, while a decrease signifies a decline in the prices of consumer goods (Goyal and Parab., 2021).

The main difference between the two lies in the focus of analysis: consumption looks at the total household expenditures, while CPI is more focused on changes in specific consumer goods prices. Although closely related, consumption provides a more holistic view of a country's economy, while CPI gives a more specific indication of price changes that can affect consumer decisions. Thus, understanding both helps economists and policymakers measure economic health and predict trends in consumer spending.

Cumulative SUM Test (CUSUM)

Basically, CUSUM accumulates the difference between the actual measurement value and the target value or expected average value of a process. This cumulative value is then used to make a decision about whether a systematic shift has occurred.

There are two types of CUSUM that are commonly used:

1. Positive CUSUM (CUSUM+): Used to detect significant improvements in a process.

2. Negative CUSUM (CUSUM-): Used to detect a significant decrease in a process.

The results of the CUSUM Test in this study can be seen in appendix 1 with the following interpretation of the results:

The movement of the CUSUM and the significance line in the regression model for each country fluctuates considerably. The movement of CUSUM for USA, China, Korea, Japan, Singapore, Thailand, Malaysia, Vietnam, Indonesia, Laos, Brunei Darussalam, and Myanmar is still within the significance line. This means that the model has stable parameters, so it can be stated that the regression model for the USA and China has high parameter stability. However, this does not apply to Japan and Cambodia, the movement of CUSUM is outside the significance line, which means that the regression model for Japan and Cambodia is still classified as unstable due to its significant changes. Japan is in negative CUSUM and Cambodia in positive CUSUM.

Linear Regression

The following are the regression results of consumption and CPI on economic growth in ASEAN3+ and the US:

Table 3.1 Regression Test Results of Consumption for ASEAN 3+ and USA on GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-Square
USA_CONSM	1.200462	0.005287	227.0640	0.0000	0.999051
CHN_CONSM	1.859384	0.011585	160.4990	0.0000	0.997754
KOR_CONSM	1.544471	0.005569	277.3367	0.0000	0.999234
JPN_CONSM	1.320872	0.019267	68.55548	0.0000	0.989890
SGP_CONSM	2.177244	0.015223	143.0245	0.0000	0.997124
THA_CONSM	1.481647	0.008185	181.0308	0.0000	0.998203
MYS_CONSM	1.491460	0.019915	74.89166	0.0000	0.989590
PHL_CONSM	1.177430	0.006107	192.8082	0.0000	0.998415
VNM_CONSM	1.355078	0.007946	170.5266	0.0000	0.998969
IDN_CONSM	1.512733	0.006848	220.8882	0.0000	0.998935
BRN_CONSM	2.330328	0.154651	15.06827	0.0000	0.850217
LAO_CONSM	1.175179	0.022843	51.44525	0.0000	0.992500
KHM_CONSM	1.289217	0.016117	79.99102	0.0000	0.994251
MMR_CONSM	1.457123	0.163001	8.939337	0.0000	0.879004

Source: Data analysis results, 2023

Based on table 3.1, the probability value of all variables implies that the consumption of ASEAN3+ countries and the US has a positive and significant influence on economic growth with the probability of each variable <0.05. The R-Square value obtained also shows a large percentage of influence, which ranges from 85%-99%. The largest R-Square value is owned by South Korea at 0.999, which means that about 99.9% of the variation in the dependent variable can be explained by the independent variables in the regression model. In other words, this regression model is able to properly explain and predict changes in the dependent variable by 99.9% and the other 0.1% is influenced by other variables. Meanwhile, Brunei Darussalam has the smallest R-

Square value of 0.850, which means that 85% of the variation in the dependent variable can be explained by the independent variables in the regression model.

Table 3.2 Regression Test Results of CPI for ASEAN 3+ and USA on GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-Square
USA_CPI	-0.023944	0.007739	-3.093748	0.0030	0.141647
KOR_CPI	-0.069287	0.010574	-6.552344	0.0000	0.425363
JPN_CPI	-0.099485	0.010948	-9.086636	0.0000	0.591594
SGP_CPI	-0.074084	0.018240	-4.061676	0.0001	0.221447
IDN_CPI	-0.008644	0.009055	-0.954597	0.3437	0.015468

Source: Data analysis results, 2023

In table 3.2 we use 2 ASEAN countries plus Korea, Japan and the United States to represent the regression of CPI value on economic growth. The table shows that Indonesia's CPI value does not significantly affect economic growth. This is evidenced by its probability value which is greater than 0.05. In addition, the R-Square value is also very small at only 0.015, which means that this regression model is only able to explain and predict changes in the dependent variable by 1.5%. However, CPI has negative and significant effect in the United States, South Korea, Japan and Singapore. This is shown by the probability value which is smaller than 0.05 and the R-Square value is also quite large. Japan has the highest R-Square value of 0.591, which means that this regression model is able to explain and predict changes in the dependent variable by 59.1% and the other 40.9% is influenced by other variables.

In the United States, South Korea, Japan, and Singapore, there is a noteworthy observation that the Consumer Price Index (CPI), a common measure of inflation, has a significant but negative effect. This implies that when the CPI decreases, indicating a reduction in inflation, these economies experience a positive impact. In other words, when inflation goes down, it leads to an upswing in the economic performance of these countries. This could be due to a variety of factors, such as increased purchasing power for consumers and lower costs for businesses, which can stimulate economic activity. However, the specific dynamics can vary between countries and would require a more detailed analysis to fully understand. This finding underscores the importance of maintaining stable prices for the health of these economies.

Discussions

The results obtained in this research indicate that consumption in ASEAN3+ countries and the USA has a positive and significant impact on economic growth. Consumption here refers to the expenditures made by households to purchase goods and services to meet daily needs. Consumption has a significant influence on economic growth. An increase in household consumption can stimulate economic growth by boosting demand for goods and services, which in turn drives production and investment. In the short term, consumption patterns can also affect fluctuations in economic activity, while in the long term, societal consumption patterns can have a significant impact on economic growth (Pramesti, 2022).

In a study conducted in Bangkalan Regency, Indonesia, it was concluded that household consumption expenditures have a significant influence on economic growth (Pramesti, 2022). If there is an increase in household consumption expenditures, economic growth will increase. This aligns with Keynesian theory, which states that household consumption expenditure decisions have a significant impact on economic behavior in both the short and long term. Consumption plays a significant role in economic growth. Additionally, other research indicates that consumption has a positive impact on economic growth, especially in the context of developing countries (Wu et al., 2010; Ahuja and Pandit, 2020).

Boehm (2020) conducted a study that included the United States, Japan and Korea also found that consumption has a significant influence on economic growth. When consumption increases, it can trigger an increase in production and employment, which in turn will boost overall economic growth. The multiplier effect occurs because increased consumption leads to increased demand for goods and services, which in turn leads to increased production and income for producers, as well as increased consumer spending and investment. This creates a positive loop where an increase in consumption triggers an increase in overall economic activity.

Furthermore, the Consumer Price Index (CPI) also needs to be considered in consumption analysis. CPI provides more specific indications of price changes that can influence consumption decisions. Thus, an understanding of both is helpful in economic analysis and policymaking to measure economic health and predict societal consumption trends. In this study, CPI also has negative and significant impact across countries except for Indonesia. This is supported by a study conducted by Mahmoud (2015), which indicates a negative and significant relationship between CPI and economic growth. The Consumer Price Index (CPI) has been found to have both positive and negative effects on economic growth in different contexts and countries. In the case of Mauritania, there is a positive and significant relationship between CPI and Gross Domestic Product (GDP) (Mahmoud, 2015). Similarly, in the case of Cameroon, CPI has a positive effect on short-term economic growth (Ngwen et al., 2015). However, in the long term, the CPI does not have feedback loops with economic growth (Ngwen et al., 2015). However, in a study conducted by Subedi (2022), CPI actually has a negative impact on economic growth. This negative impact is very good for the economy because if the CPI is low, it will increase economic growth and vice versa. These findings indicate that the relationship between CPI and economic growth is context-specific and can vary depending on the country and time period under consideration. Therefore, a more comprehensive revaluation of CPI is needed to clarify its impact on economic growth.

Conclusions

The research findings reveal two significant relationships between economic growth and two factors: Consumption and the Consumer Price Index (CPI). Firstly, consumption has a positive and substantial impact on economic growth. This is because an increase in household consumption can stimulate economic growth by boosting the demand for goods and services. This increased demand, in turn, drives production and investment, leading to economic expansion. Consumption patterns can influence economic activity both in the short term, through fluctuations, and in the long term, through societal consumption trends. According to Keynesian theory, decisions about household consumption expenditure significantly affect economic behaviour in both the short and long term. Therefore, consumption plays a pivotal role in driving economic growth. Secondly, the CPI, which is a measure of inflation, has a significant but negative influence on economic growth. This means that when the CPI decreases, indicating a reduction in inflation, these economies experience a positive impact. However, the relationship between CPI and economic growth is not uniform across all contexts and can vary depending on the specific country and time period under consideration. Given these findings, it's clear that both consumption and CPI play crucial roles in influencing economic growth, albeit in different ways. However, due to the context-specific nature of the relationship between CPI and economic growth, a more comprehensive re-evaluation of CPI is needed to clarify its impact on economic growth. This re-evaluation would provide a more nuanced understanding of how inflation influences economic growth in different contexts, thereby informing more effective economic policies.

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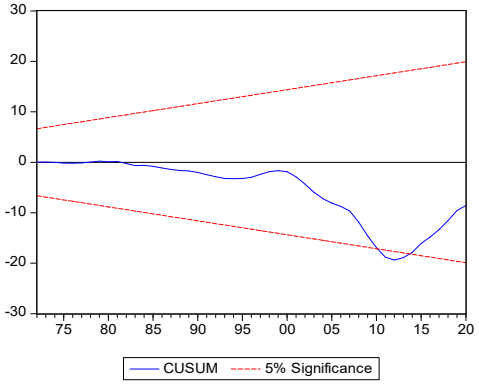
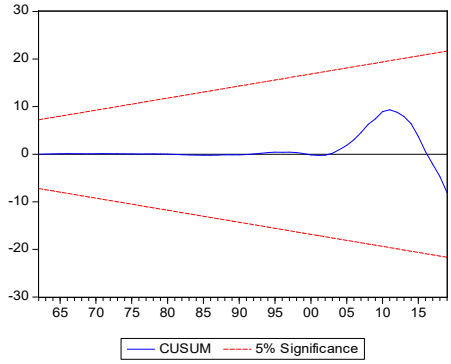
APPENDIX

CUSUM Test Regression Results of Consumption for ASEAN 3+ and USA on GDP

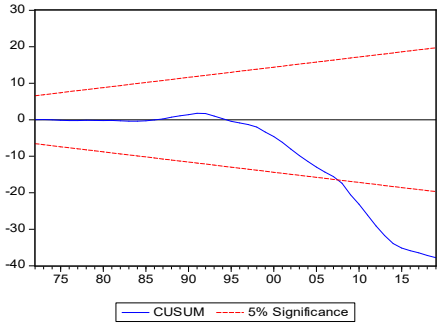
USA



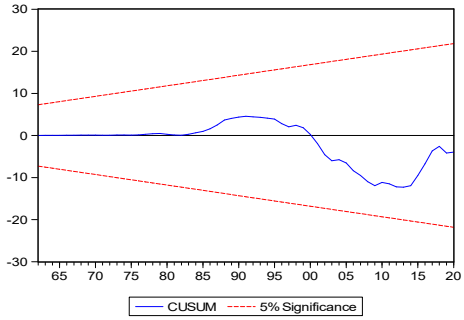
CHINA



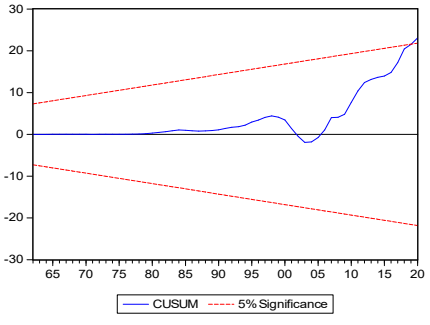
JAPAN



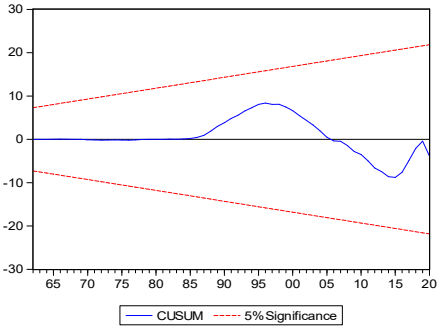
KOREA



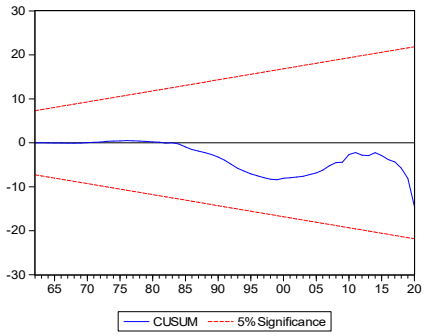
SINGAPORE



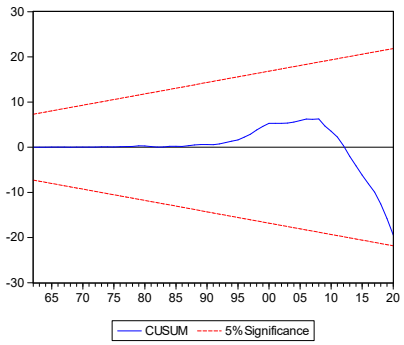
THAILAND



PHILIPINE



MALAYSIA



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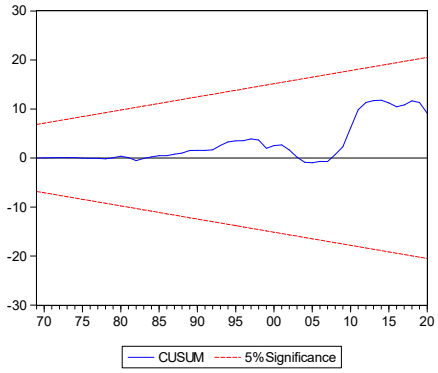

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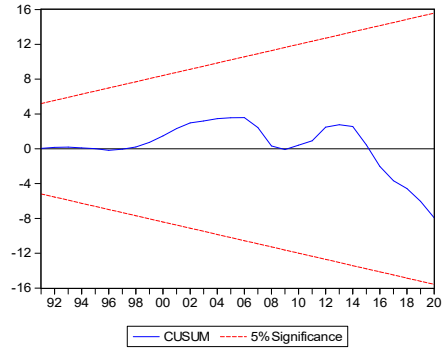

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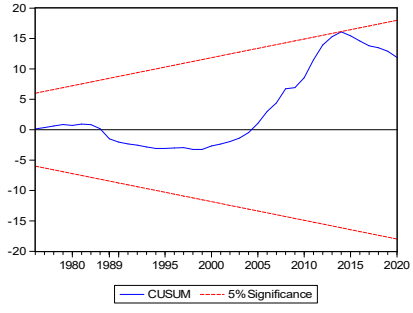

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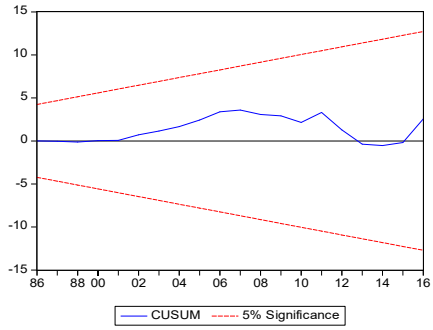
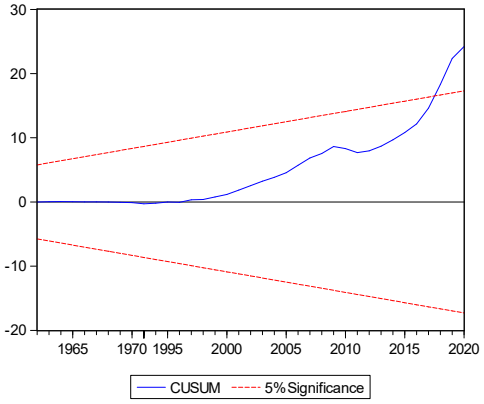


CAMBODIA



MYANMAR